

**Supplemental  
Notice of Allowability**

Application No.

09/919,186

Examiner

Fred I. Ehichioya

Applicant(s)

TARDITI, DAVID R.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/27/2004.
2. ☒ The allowed claim(s) is/are 1, 2 - 10, 14, 15, and 17 - 23 (renumbered 1 - 18).
3. ☒ The drawings filed on 30 July 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

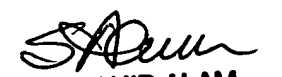
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8/27/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**SHAHID ALAM**  
**PRIMARY EXAMINER**

**DETAILED ACTION**

1. This office action is in response to the communication: RCE filed 8/27/2004 and Preliminary amendment filed 6/22/2004, to the original application filed 07/30/20001.
2. Claims 1, 2, 4 – 12, 14, 17 – 25, 27 – 29, and 31 – 32 are pending; Claims 1, 11, 14, 18, 19, 24 29, and 31 are amended and Claims 3, 13, 16, 26, 30 and 33 are canceled.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 8/27/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Continued Examination Under 37 CFR 1.114***

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/27/2004 has been entered.

**Allowable Subject Matter**

5. This application is in condition for allowance except for the presence of claims 11, 12, 24, 25, 27 – 29, and 31 – 32 non-elected without traverse. Accordingly claims 11, 12, 24, 25, 27 – 29, and 31 – 32 have been cancelled.

During telephone conversation with George Lewis, Attorney for the Applicant, Registration Number 53,214 on July 16, 2004 a provisional election was made without traverse to prosecute claims 1, 2, 4 – 10, and 14, 15, 17 – 23.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the claims,

Please cancel claims 11, 12, 24, 25, 27 – 29, and 31 – 32.

6. Claims 1, 2, 4 – 10, and 14, 15, 17 – 23 (re-numbered 1 – 18) are allowed over the prior art of record.

7. The following is an examiner's statement of reasons for allowance:

The prior art of record, either singularly or in combination, fail to anticipate or render obvious the recited feature "a computer program product encoding a computer program for executing on a computer system a computer process for identifying a root set of pointers to a heap in a call stack using compact garbage collection tables adapted

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for use in reclaiming memory from the heap during runtime, the computer process comprising:

- generating a first call site table storing call site identifiers, each call site identifier identifying the location of a call site in a computer program;

- generating a final descriptor table storing a set of unique descriptors to be associated with one or more stack frames by a garbage collector, each unique descriptor describing a set of registers containing pointers to the heap and a set of offsets relative to a location within each of the one or more stack frame containing pointers to the heap;

- generating a descriptor reference table associated with the first call site table, each entry in the descriptor reference table mapping a call site identifier in the first call site table to one of the unique descriptors in the final descriptor table;

- traversing the call stack and associating a first stack frame in the call stack with a first call site identifier using the first call site table;

- associating the first call site identifier with a first unique descriptor in the final descriptor table using the descriptor reference table; and

- using the first unique descriptor to identify the set of registers containing pointers to the heap associated with the first stack frame and the locations of pointers within the first stack frame containing pointers to the heap", as recited in the independent claims.

The dependent claims, being definite, further limiting, and fully enabled by the specification are also allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred I. Ehichioya whose telephone number is 571-272-4034. The examiner can normally be reached on M - F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred I. Ehichioya  
Patent Examiner  
Art Unit 2162

May 24, 2005

  
**SHAHID ALAM**  
**PRIMARY EXAMINER**